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LEARNING TO READ A FOREIGN LANGUAGE

AN EXPERIMENTAL STUDY

BY

MICHAEL WEST, M.A

READER IN EDUCATION, DACCA UNIVERSITY

WITH DIAGRAMS

"Methods of teaching pupils to read languages accurately and rapidly should be developed and made the subject of experiment."

PREFACE

THIS book contains a brief and simple account of a series of experiments (extending over four years) in regard to the teaching of reading ability in a foreign language. A full account of these experiments and of other related inquiries is contained in *Bilingualism—with special reference to Bengal*, to be issued by the Bureau of Education of the Government of India (1926). The present book discusses those aspects of the work only which seem likely to be of general interest to teachers and learners of foreign languages in other countries.

<div align="right">M. P. W.</div>

GREENHAYES
  ABINGDON
    BERKS

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ILLUSTRATIVE DIAGRAMS

LEARNING TO READ
A FOREIGN LANGUAGE

CHAPTER I

THE NEED

READING ability in a foreign language is needed for two reasons :

(1) For its own sake alone, *and*

(2) As an initial stage in the learning of a foreign language (speech, writing, and reading).

The Need of Reading Ability for Its Own Sake

The power of reading modern languages is needed because the complexity and international " team-work " of modern thought is such that " No country can afford to rely on its domestic stores of knowledge. . . . In no branch of knowledge, abstract or concrete, disinterested or applied to the uses of man, can the specialist neglect the work of foreign students."[1] Under the conditions of modern life almost all men are specialists.

But there is a wider aspect. Many subjects are taught in school, not merely because they are useful to the individual, but because they are desirable for the well-being of mankind. Foreign languages are

[1] " Modern Studies," H.M. Report, 1918, page 30.

such a subject. National literacy facilitates national propaganda and nationalist feeling—the fuel of war. International literacy promotes international understanding and goodwill. Now, comparatively few of our pupils ever go outside their mother-country, and still less of them, even if they go abroad, have acquired at school such speaking-power in a foreign language that they can converse on the topics which are the stumbling-blocks to international goodwill—or on any topic other than the commonplaces of travel and hotels. To understand a nation we must appreciate their ideals, and these are best expressed by the nation's greatest men : these great men, living and dead, are met at their best in the nation's literature. *International good-understanding can best be promoted by teaching the children of the world to read each other's languages.*

The Case of the Bilingual Child

This need of access to the literature of foreign peoples is especially marked in the case of bilingual peoples—namely, of the peoples of the smaller languages of the world. The mother-tongue of such peoples is the most apt and natural expression of the " dear and intimate things " of the home and the mother-country ; but it is inadequate, both as a means of expression and in the contents of its literature, in respect of the world of modern thought and knowledge. Hence these peoples, if they aspire to any educational standard beyond mere local literacy, are compelled to become bilingual.

Now it is a not uncommon phenomenon to find that the educated classes among such peoples, in order to

supply their deficiency in respect of access to know-ledge, neglect their mother-tongue and acquire in its place a full and active use of a foreign language—as regards speech, writing, and reading. By so doing they neglect the language which embodies in its words the foundations of their emotional life, and replace it by one which, however fruitful in respect of knowledge and thought, can never possess for them the intimate emotional significance of the language of the home. They grow up, therefore, intellectually educated, but emotionally sterile.[1]
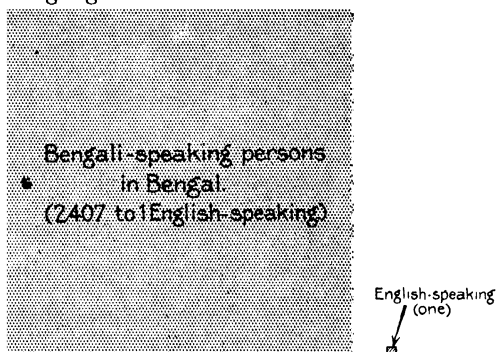
This sacrifice is uncalled for. The need was a need of the power to read foreign languages, the need of a *passive* knowledge. It is only the very few, of greater intelligence, linguistic aptitude and opportunity, in any country who have occasion to converse with foreign peoples in their own languages. Such persons possess the aptitude and the opportunities for acquiring a full active knowledge of a foreign language without detriment to their study of the mother-tongue. But the *average* boy has neither the ability nor the opportunity to learn a foreign language in this way—nor yet has he the need. If he succeeds, he succeeds at the cost of his mother-tongue, and his success is useful to him only in so far as it enables him to read the foreign language—a power which (as we shall see) he might have achieved in far less time and without any sacrifice whatever.

The essential need of the average bilingual child of a minor language is simply that of reading ability in one of the major languages to supply the informational and scientific deficiency of his national literature.

[1] Or unstable—un-" sublimated."

The Bilingual child does not so much need to *speak* his second language—

Bengali-speaking persons
in Bengal.
(2407 to 1 English-speaking)

English-speaking
(one)

but rather to *read* it—

The Annual Output of Books
Bengali, 12¾ years average
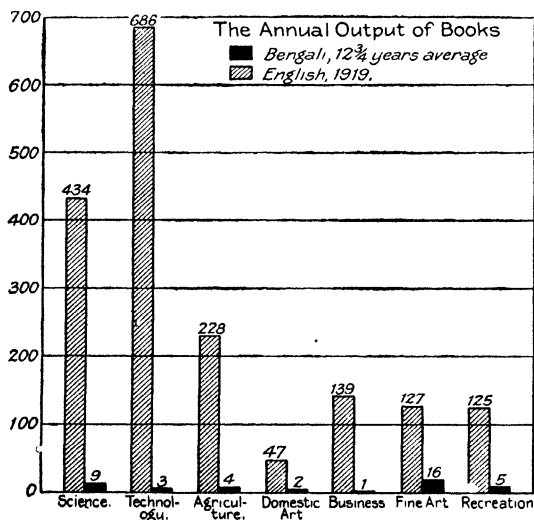English, 1919.

FIG. 1.   The Need of a Bilingual Child.

Reading as a Part of the Initial Stage of Learning a Language

The initial stage of learning a foreign language should, we believe, be to learn to read it—even in the case of the student who aims at complete mastery (of reading, writing, and speech).

In beginning to use a foreign language we tend constantly to approximate the foreign idiom to that of the mother-tongue. Sometimes the analogy is correct ; more often it is not. We have no means of telling whether a proposed original re-combination of our small stock of words and phrases is justifiable or not, but every time we take the chance, and make a false combination, we tend to fix a mistake in our minds and so to contaminate our idiom at its source. To prohibit beginners from all original combinations both inside the classroom and outside would be to make the work very dull : in practice it is impossible to enforce the prohibition.

An infant learning its mother-tongue is faced by a similar problem : to a certain extent he solves it by " Trial and Error " ; but not entirely. For a child listens and understands long before he speaks at all, and his power of understanding what is spoken is always very far in advance of his power of speaking. Hence, when he ventures on a new phrase, it is usually something which he has heard before, or something which his general " Sense of the Language," acquired by listening, certifies as likely to be correct.

The student of a foreign language in the school hears the language spoken relatively very little. Teachers endeavour to give practice in listening, and this is

recommended by theorists, but actually it is difficult to do much or to provide any variety.

If it were possible to teach the child to read (of course with correct pronunciation) sufficiently fluently to make him enjoy reading and read a reasonably large amount before permitting him to attempt any speech at all, the child would, when he came to the speech-lessons, have a Sense of the Language and a feeling of what is idiomatic which would very greatly diminish his liability to error and very greatly accelerate his progress.

Reading is not only the most interesting but also the easiest aspect of a language to acquire ; for reading involves no active use of grammar and idiom, and the memory of the vocabulary is merely Recognition. Thus, in the early stage, when the child is most likely to become discouraged, his progress is most rapid ; and in the later stage, of the active use of the language, his progress is accelerated and safeguarded by his previous passive study.

The " Surrender Value " of a Subject

Thorough mastery of a language is a very large task, whereas school life is often very short. The schoolmaster hopes, when initiating a child into the study of a foreign language, that the child will eventually go so far in it that he will acquire a useful and enjoyable proficiency in its speech, writing, and reading. If the child fails to do this, if he leaves school when he can use the language only with great difficulty and with no pleasure, he will soon cease to use it : and what he ceases to use he will soon forget. So all his learning was really a waste of time.

It is necessary to ensure that every child who begins the study of a foreign language shall acquire as early as possible some ability in it which he will be able to use, enjoy, and improve by himself after he leaves school. The easiest ability to acquire in a language is Reading; the ability which can most readily be enjoyed in a foreign language is Reading; the ability which can most easily be improved in solitude without the help of a teacher is Reading. And the child who leaves school earliest is the least likely ever to need more than Reading ability in a foreign language.

If we can ensure that every child who begins to study a foreign language shall, at the end of two years, be able to derive pleasure from reading it, we shall have ensured that no child who begins a foreign language will ever, in the future, be able to regret it afterwards as a waste of time.

We believe that we can.

READING ABILITY

READING ability is a general power: it is not confined to one language: for improvement in the ability to read one language is " *transferred*,"[1] and shows itself in improvement of the reading of another language. Thus a class of seventeen-year-old Bengali students was given twenty periods of practice aiming at increased speed and efficiency in the reading of English; the practice was given entirely in English. The resulting improvement in the rate of English reading was 232 per cent., while the improvement in the rate of Bengali reading (in which no practice had been given) was 266 per cent.[2]

If practice in a foreign language improves the rate of reading in the mother-tongue it follows that practice in the mother-tongue will probably improve reading in a foreign language. If such practice is needed it should obviously be given in the mother-tongue for preference. It is, moreover, clear that it is of little use attempting to teach the reading of a foreign language unless one is first certain that the child is able to read his own mother-tongue efficiently.[3]

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[1] " Transference of Training " means the improvement of a mental function in which no practice was given by means of practice in some other related function.

[2] See *Bilingualism*, Table 54.

[3] For a striking example, see page 36 below.

We must discuss briefly the meaning of this term, " Efficient Reading." There is not space for a detailed treatment[1] of the point : the conclusion must suffice here.
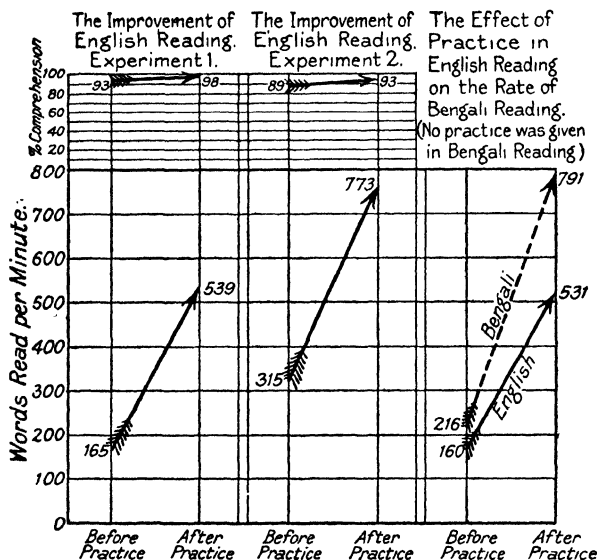

FIG. 2.   The Improvement of English Reading.
(In experiments 1 and 2 the practice period was 16 hours ; in the third experiment it was 20 hours).

There are two main types of reading :

(1) *The Observational type.*   In this type of reading the reader goes through the matter observing every

[1] *Bilingualism,* Chapter VI.

word (or almost every word) and waiting to see what ideas arise.

(2) *The Searching type.* In this type of reading the reader skims over the surface of the printed matter definitely searching for certain required items. He does not read every word, but surveys the matter in large units of several words at a time, coming to rest, as it were, on the text only when one of the required ideas is found.

The former type, Observational Reading, is the childish, unpractised type; the latter, Searching, is the adult, practised type.[1] For adult life under present conditions demands an immense amount of reading in the course of a day, and that reading has to be selected out of an even more vast amount of printed matter. Observational reading is incapable of any speed exceeding about 400 words per minute; Searching reading may, under favourable conditions, yield as high a speed as 1,200 words per minute (the students' answers showing 80 to 100 per cent. accuracy).

The difference between the two types of reader is illustrated by an experiment.

It is obvious that the rate of reading of any individual with any given material will vary according to the proportion of the total ideas which he is required to extract from that material. A boy will read very much faster when he is expecting to be questioned only on the bare narrative than when he expects a cross-examination on the details. In order to observe this difference a test was constructed as follows:

---

[1] " He has only half learned the art of reading who has not added to it the more refined accomplishments of skipping and skimming."—A. J Balfour, *The Pleasures of Reading,* 1888, page 42.

Three Questions	*Words per Question*	*" Density "* (Questions per 1,000 Words)
On the first 150 *words*	50	20
On the next 300 *words*	100	10
On the next 600 *words*	200	5
On the next 1,200 *words*	400	2.5
On the next 2,400 *words*	800	1.25

The test was applied before and after a course of practice in English reading. Before practice there was no regularity in the shape of the graphical record of the rate of reading of the class in each of the five sections. After the class had been given twenty periods of training in reading a graph of the shape shown below was yielded. Adult teachers, given the same test, yielded on every occasion a " profile " of precisely the same shape as this, irrespective of change in the reading material used.

So long as the unskilled reader is required to reproduce a large proportion of the ideas contained in the passage his " Observational " type of word-by-word reading proves quite effective. When a rather smaller proportion of the total ideas is demanded of him, he reads rather more rapidly—but still observationally. At a rate of about 400 words per minute he has reached the maximum rate of which this type of reading is capable. The situation still invites a further increase

of speed, but he cannot increase his speed so long as he reads observationally.   He tries, but fails to better his former speed : hence the " Plateau " in the graph.

The Reading Profile of a Child.
(Note the failure to adjust to
  a "Skimming" situation)

The Reading Profile of an Adult.
(Note the plateau just before he
  changes to "Skimming", a constant
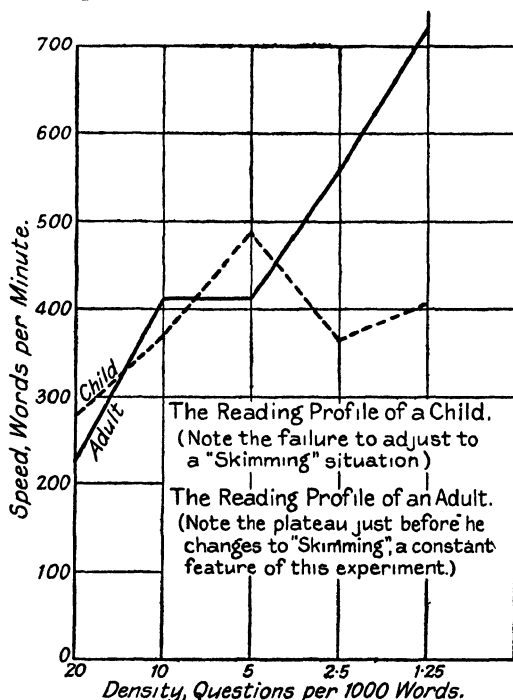 feature of this experiment.)

FIG. 3.   Reading Profiles.

At this point the essential difference between the skilled adult reader and the unskilled childish reader reveals itself.   At the very low " question-densities " of the remaining parts of the test the unskilled reader

continues at his former rate or merely flounders in an unfruitful attempt to attain higher speeds in his Observational type of reading. The skilled reader abandons his Observational reading and adopts a Searching type of reading. Thus, with a new type of response, he embarks on a new phase of improvement.

Improvement in reading is thus not a regular growth of the same skill yielding a regular growth curve such as would be found in the records of a practice class in Adding, or Handwriting, or Walking ; it is a sudden growth dependent on the acquisition of a new skill— as if the Walking Class suddenly rode away on bicycles.

To convert a childish Observational reader into an adult Searching reader is a comparatively easy and rapid process. In three separate experiments with seventeen-year-old Bengali students reading English the change took place, in the majority of cases, within twelve to fifteen days. (See Fig. 2, above.)

The sum-total of the matter—as regards the subject of the present book—is that before beginning to teach a child to read a foreign language it is necessary that he should be made fully efficient in the reading of his mother-tongue. The ordinary school training in reading is such (not only in India but elsewhere also) that it is by no means safe to assume that the children are efficient readers ; but, with correct methods of training, it is very easy and takes very little time to make them so.

THE FIRST EXPERIMENT

WHAT method should be used in teaching a child reading ability in a foreign language, who does not necessarily—or does not at present—need any other ability in the language ? We need not begin by teaching the child to speak, for that would be to teach something easy by means of something more difficult. We should not use translation, save in so far as it is unavoidable, for our ultimate aim is that the child should read and understand fluently.[1]

One general principle applies to all problems in teaching, namely, that the most realistic practice (so far as it is practicable) is the most effective. The best way to practise swimming is by swimming in water. But complete realism is not always possible,

---

[1] Translation tends to create an indirect " bond." When a child reads, if he has been taught by the translation-method, instead of thinking :

    Homme—(Idea of " Man "),

he thinks :

    Homme—Mother-tongue Word for " Man "—Idea of " Man " (an Indirect Bond viâ the mother-tongue). The mind tends ordinarily to " short-circuit " any such indirect bond, e g memorial devices for remembering names or dates drop out in course of time, leaving a direct bond. If fluency is emphasized in the teaching of a language indirect translation-bonds tend to be eliminated in this way. But if we insist on translation throughout, even when it is not necessary, we tend to perpetuate these indirect bonds by practising them, and thus we actually prevent the child from becoming fluent.

especially in the early stages ; we have to adjust the real situation so as to make it practicable to a beginner. The more we adjust and alter the teaching-situation from the real, the more difficult we make it for the child to carry over or " transfer " the effects of his training into real life.

Now we already possessed a system for training adults in reading. The students were set to read and find the answers to questions ; as soon as each student found the answers, he stood (to show the time taken) and turned down his book ; he then wrote the answers. This system had produced very satisfactory results in three experiments.

Of course, the adults knew the meaning of nearly all the words which occurred in the very easy reading material which was used ; but occasional words did arise with which they were likely to be unfamiliar. Such words were written on the black-board and taught before the reading of the section was begun.

We decided to adopt this system as a starting-point and to modify it as necessity arose.

The class selected for the first experiment already knew the English alphabet and about 150 English words. For the first few lessons stories were specially composed, as no ready-made material could be found which was easy enough. Later on the easiest narrative material was given to them.

The class was divided into two groups, each boy being paired with one of equal initial knowledge and ability (as determined by various tests).[1] One group was taught by the experimental method ; the other

[1] For a description and discussion of the tests used in these experiments, see *Bilingualism*, Chapters VI and IX.

continued to be instructed in the traditional way. The allotment of time was the same in both classes.

After one term tests were applied to both groups, and it was found that the Experimental group showed no superiority over the other (" Control ") group. Some modifications were made in the procedure, and at the end of the year the Experimental group showed a superiority of from 30 to 50 per cent. over the Control group in various tests of English reading, while in the other departments of English work (writing and composition) which had not entered into the experiment the two groups were equal.

The first experiment was useful in working out a satisfactory procedure ; it also made it evident that no further advance could be made with these reading materials.   When a child is learning to speak a language, he speaks, and the teacher speaks and teaches him ; but when a child is learning to read a language, he reads and the *reading-book* teaches him. Everything therefore depends on the book ;   the teacher is a mere master of ceremonies.

The reading-books used in the first experiment were *Sindbad the Sailor* (in words of one syllable), *Robinson Crusoe* (ditto), *The Wizard's Chair*, and other similar material—very easy fairy-tales written in the simplest language for English children.   They were the simplest books which could be found which were likely to be of any interest to the class whose age was eight to nine.

Yet these books were much too difficult.   Unfamiliar words were so frequent that more than three-quarters of the lesson was spent in teaching them, and the actual reading became an infinitesimal proportion of the work.   In the long intervals of word-teaching the

boys forget or lost interest in the thread of the story. The new words were so frequent even in the shortest section that the boys could not remember them all, and failed to grasp the sense of the passage for lack of an essential word. Words learned in past lessons were forgotten because, being of not very common usage, they occurred in the one passage and never again.

These books were supposed to be the easiest possible narrative reading material ; and yet it was obvious that they were in a hundred respects more difficult than they need be. Things were written with many new and unfamiliar words which might just as easily have been written with words which had been already taught ; strange and unusual words were used where common and useful words would have done just as well. At times one would almost have thought that the authors were trying to bring in as many different words as possible, and those the most outlandish that they could find.

The next step was obviously an investigation of the problem of securing better reading materials.

THE CONSTRUCTION OF READING-BOOKS

ONE of the most wasteful things in the world to-day is the school textbook.[1]

A textbook in an important subject occupies one hour a day for a year of a child's life. School textbooks are ordinarily produced in tens of thousands, so that a slip or obscurity which wastes five minutes of the child's time, wastes ten or twenty or thirty thousand times five minutes of the nation's time, just at the age of life when the nation is most impressionable, and its learning time is most valuable. Textbooks are usually printed from stereotypes; hence their obscurities are also stereotyped, and the books cannot (save at long intervals) be altered and improved in the light of experience in their use. Practical and efficient school-masters are in many cases too busy to write textbooks—except when they are retired and out of date. Hence the writing of such books is often left to literary hacks, private tutors, unemployed lawyers—or less successful schoolmasters.[2]

Given a good textbook all that the teacher has to do, in most subjects, is to see that the children study it. But a bad textbook demands a high degree of

[1] H. G. Wells: *Mankind in the Making*, 1903 (1914, page 322).

[2] This is doubtless more true of India than of England, but not without truth in both cases. Even if the schoolmaster does find time to write a textbook, he has not often the time nor the facilities to do more than embody the existing practice.

skill in the teacher in order to make the best of it, and a large amount of teaching in order to guide the children through it. A large part of the time of Training Colleges is spent in training teachers to combat or to make up for the deficiencies of their textbooks, and a great part of the time of the children, when they might have been learning, is spent in listening to the teacher making up for the deficiencies of their textbooks.

Ideally a school textbook should be worked out by a staff of research workers, after an exhaustive and probably rather expensive survey of the real requirements of the subject and of the deficiencies of existing textbooks.[1] It should be issued first in an edition sufficient only for two or three classes in experimental schools in which it would be taught by selected teachers under observation of the authors, and criticized throughout by the teachers, the observers *and by the pupils themselves*. It would then be revised and issued in a larger edition in order to observe the difficulties experienced by the ordinary teacher and pupil working in ordinary schools. It may then be issued in a larger edition to meet a year's demand, and every user should be invited to criticize it. In fact the book should be kept for ever standing in type, for ever under revision, for ever being improved.

There would be very little profit in this book for publisher or author, or anyone—except the children who have to study it, and the nation or parents who pay for their education.

[1] For instance, Professor E. L. Thorndike's valuable studies of the Psychology of Arithmetic and his series of Arithmetic textbooks based on the principles which were evolved in the course of those inquiries.

The Vocabulary Discrepancy

We are to discuss the problem of providing textbooks for teaching reading in a foreign language.

The growth of the English vocabulary of a Bengali boy is shown below with the corresponding stages of the English vocabulary of an English child set beside it.

Bengali Boy		English Boy		Difference in Years
At Age	Number of Words Known	Number of Words Known	At Age	
16	5,045	5,000	9½	6½
15	3,786	3,960	8½	6½
14	2,600	2,600	7½	6½
13	1,995	—	—	—
—	—	1,528	5½	7
12	1,049	—	—	—
11	881	700	3½	7½
10	389	405	2½	7½
9	153	215	2	7

Now the age of the first experimental class was eight to nine. In order, therefore, to find reading material sufficiently interesting to them, it would be

necessary to select books suitable to English children aged eight to nine; but the English vocabulary of such matter would be that of a Bengali child at the age of fifteen or sixteen. Conversely, if matter be selected which is suitable to the class in respect of vocabulary (153 words) it would be suitable in point of subject-matter to an English child aged two.

This was the dilemma.

The Selection of Vocabulary

If stories have to be composed suitable, in respect of their plot, to children aged nine, but written in the vocabulary of children aged two, it is obvious that the words of this two year-old vocabulary will have to be very hard workers. Now it is possible to conceive of a vocabulary of even 4,000 words with which it would be impossible to tell even the simplest fairy-tale—(*Abdomen, Abed, Abomination, Abridge, Abstinence*, etc.). It is possible to imagine a vocabulary of only 1,000—or even 500—words, but words of a more useful type, with which one could tell almost any simple story—(*A, About, Afraid, Again, All, And, Angry*, etc.). The English vocabulary of an English boy contains a certain proportion of words which are very seldom of use to him in his reading—out-of-the-way words picked up by chance, local slang, technical terms of his father's profession or of his own hobbies: it contains also a number of duplicates —" Folk—people," " Smite—hit—strike," etc.

Suppose that all this wastage were eliminated, that the English vocabulary required for the foreign child of a given age were composed, for its size, of the most useful words with no duplicates; then this carefully

selected vocabulary might be able to do the work of the far larger but less carefully selected vocabulary of an English child of the same age.

Professor Thorndike[1] of Columbia University has compiled a list of the 10,000 commonest English words, each word having a number set against it indicating its position in order of commonness in the English language (or rather in that sample of English literature from which the list was derived).   Thus :

A	*is among the first*	100 *commonest words.*		
Abdomen	,,	,,	8,000	,,　　　,,
Abed	,,	,,	8,000	,,　　　,,
About	,,	,,	100	,,　　　,,
Abomination	,,	,,	8,000	,,　　　,
Afraid	,,	,,	1,000	,,　　　,,

Professor Thorndike's list was constructed by making an actual tabulation of 1,865,000 running words taken from Children's books, the Bible, School texts, Technical books, Newspapers, and Private Correspondence.

We have here an exact criterion to help us in the selection of words.   By its help it should be possible so to choose a vocabulary for the foreign child that, at every point, the smaller the number of words available, the greater will be the usefulness of each individual word ; for the words will be introduced into the vocabulary of the foreign child in the order of their relative commonness as shown in the Word-frequency List.

The table below will show how little any attempt

of this kind had been made in the reading-books used
in the first experiment.

Words used in Sindbad the Sailor Chapter I.	Position in the Word List.[1]	More common word by which it might have been replaced.	Position in the Word List[1]
Mode	2,500th	Way	100th
Isle	2,500th	Island	700th
Nought	4,000th	Nothing	300th
Plight	5,000th	State	300th
Bale	7,700th	Box	500th
Ere	1,500th	Before	100th
Lack	1,500th	Need	300th
Herbs	3,000th	Plants	400th
Groom	4,500th	Servant	1,500th
(Five) score	1,700th	(One) hundred	300th
Folk	1,200th	People	200th

Experiments were made in order to determine to
what extent various reading matter could, by replacing
the rare words by words included in a given section

[1] The Word Book shows " credit-numbers " : these have been
converted approximately.

of the Word-frequency List, be brought within a vocabulary of a given size. The result of these experiments established without doubt the extraordinary flexibility and power of vocabularies selected in this way. Practically any non-technical matter can be brought within a vocabulary of 5,000 words merely

Author.	Name of Book.	Number of Words per page which would have to be Altered.
Henty	*Redskin and Cowboy*	3
Lang	*The Violet Fairy Book*	5
Marryat	*Mr. Midshipman Easy*	7
Stevenson	*Treasure Island*	9
Bennet	*Mr. Prohack*	11
Kipling	*The Jungle Book*	13
Dickens	*Nicholas Nickleby*	$13\frac{1}{2}$
Cooper	*The Prairie*	14

by alteration of a phrase here and there. (A vocabulary of 5,000 words can be acquired by an average class of Bengali boys within about six years, or less.) For example, to bring the above-named books within the first 5,000 words of Professor Thorndike s list, it

would be necessary, on the average, to alter on each page the number of words shown.

Almost all the required alterations could be made very easily and without change in the meaning or awkwardness in the expression.[1]

With a vocabulary of 100 words it is possible to begin to tell stories; with 300 words story-telling is easy, and with 400 words it is possible to tell long stories without introducing any new words outside the 400.

The Criteria of Reading-books

Let us now endeavour to formulate a set of ideal criteria whereby books already available may be judged; and, if none of these books prove suitable for our purposes, these criteria may serve as a guide in the construction of the necessary books.

Four points are axiomatic:

1. *The child should at the earliest moment derive pleasure and a sense of achievement from his study.*

2. *Words should be learned by practice in reading situations, not memorized as vocabularies.*

3. *The smaller the vocabulary, the greater must be its usefulness.*

4. *The reading-book must be suitable to the age of the child in respect of its subject matter.*

1. **The child should at the earliest moment derive pleasure and a sense of achievement from his study.**

(A) It follows that, in the case of a child who does not know the English alphabet (or the alphabet of the

[1] For examples, see *Bilingualism*, Chapter VIII.

foreign language in question), *the reading of meaningful sentences, amusing exercises and stories must be begun before the learning of the alphabet is complete.* Otherwise the child will have to commence his study of the foreign language by spending many weary weeks in learning to recognize the whole twenty-six letters and in reading disjointed words or other senseless matter : this would discourage him at the start.   Each letter must therefore be built in, in order, with sufficient practice for the letter to be learned in the process of reading the lesson in which it first occurs ; and the lessons must be made to consist of sensible interesting matter as soon as there are enough letters and words available.

(B) A second point arises from this axiom.   The minimum " pleasure and sense of achievement " is derived from reading a passage of which every single word is unfamiliar, and the maximum " pleasure and sense of achievement " from reading one in which it is not necessary once to check on an unfamiliar word. The latter type of reading might be useful as revision but it would not carry the vocabulary forward. Taking a page as containing 300 words, the introduction of one new word in 100 running words would involve 3 stoppages per page ; one new in 50 running words would involve 6 stoppages ; one new in 25 running, 12 stoppages ; one new in 10 running, 30 stoppages, or one stoppage in every line.   One stoppage per line would seriously interfere with the pleasure and continuity of the reading.   One stoppage per page would be ideal from the point of view of pleasure, but would carry the vocabulary forward rather slowly, and would be very expensive, for it would involve

the provision of 180,000 words of reading matter per annum to yield the normal progress in vocabulary (about 600 words). Six new words per page would be the highest limit at which the child could preserve the continuity of the story and enjoy his task. We may therefore decide that *New words should not be introduced more frequently than one new in every fifty running words of the text.*

2. New words should be learned by practice in actual reading situations, not memorized as vocabularies.

The most " realistic " practice in acquiring a reading vocabulary is the recognition and interpretation of words in the actual process of reading. Now the learning of vocabularies is not " recognition of words in the process of reading " ; it is an artificial process which may bear very little relation to reading, so little indeed that a boy may know a word in the vocabulary yet fail to interpret it in the process of reading. If the number of new words in a book is excessive, vocabulary-learning is bound to result. We have already fixed the number of new words allowable in a book of a given length. But in composing a book or story there is always a tendency for the whole " ration " of new words to get used up at the beginning, and for the rest of the book the author accustoms himself to doing without. • Thus the first part of the book is mere dictionary work and vocabulary-learning, and the rest is mere revision.

Moreover, if too many words are introduced at the beginning of the book, certain of these words are sure to be overlooked by the author and will not occur again in the latter part, or will occur very infrequently ;

thus the child will get no practice in recognizing them and will soon be allowed to forget them.

We may therefore lay it down that *new words should occur at regular intervals, not in a mass*.

Further, on the first introduction of a word much practice is needed to fix it in the memory : after that it should occur as a reminder at progressively longer and longer intervals, until it is fully known and needs no further revision.   In practice we may lay it down that *each new word on its first appearance should occur at least three times in the paragraph and as often as possible in the rest of the lesson or story*.

3. The smaller the vocabulary, the greater must be its usefulness.

As a practical criterion we may lay it down that *in judging a reading-book or series of reading-books with a vocabulary of x words, each word outside the first x commonest words which can be replaced by a word within or nearer to the x commonest words shall count one mark against the author*.

We may also lay it down that *all synonyms* (outside the *x* words) *are waste of opportunity on the part of the author and should be avoided*.

4. The matter of the book must be suitable to the age of the child.

Or in other words, *would each individual lesson or story, if translated into the mother-tongue of the foreign child, be interesting to him ?*

Application of these Criteria to Existing Reading-books.

An examination was made of four sets of reading-books in common use in the schools : the result was

to reveal the complete absence of any definite principles in their construction.

In none of the books is there any attempt to introduce the letters of the alphabet in a regular order with sufficient practice of each at its first appearance. Either the whole alphabet is printed on the first page, as in Series 1 ; or, as in the other three series, the letters come in as they please, without notice and without practice.

In the first one hundred words of the text :

> *Series* 1 *introduces* 26 *letters.*
> ,,   2   ,,   14   ,,
> ,,   3   ,,   21   ,,
> ,,   4   ,,   17   ,,

whereas the experimental reading-book ultimately constructed introduces 6 letters, and the final reading-book (see Chapter VI below), 5 letters in the first 100 words.

There is no attempt to build up in the early stages a vocabulary which will render possible the introduction of meaningful material at an early stage. In Series 4 there are 770 words in the vocabulary before any narrative is introduced, whereas in the first experimental reading-book the first connected interesting material occurs when there are 65 words and the first narrative when there are 86 words in the vocabulary. In the final reading-book (see Chapter VI below) exercises requiring answers—on the lines of a simple " intelligence test "—are introduced when there are only 11 words, Picture descriptions when there are 57, and Narrative when there are 142 words in the vocabulary.

The number of Running words per New word is shown below :

Series.					Running words per one New word.
I	..	..	..	..	7
2	..	..	..	..	6
3	..	..	..	..	11
4	..	..	..	..	7
The Experimental Series ..			..		45

In some of these books the first appearance of a new word is not marked in any way : one series supplies a vocabulary at the head of each lesson—but these vocabularies are not exact. Thus, in a certain lesson the vocabulary contains one word, whereas the actual number of new words in the lesson is seven ; in another lesson it contains three words, one of wnich is *not* new and omits five other words which are new. In the final series of reading-books which resulted from these experiments each word is printed in italics at its first appearance and is repeatedly introduced in the succeeding passage.

<div align="center">Examples : [1]</div>

Awoke—The King's son kissed her. She *awoke*. Then all the house awoke ; the man awoke at the door. The woman awoke and put on her shoe. The boy awoke and read his story. The King awoke at his table. The Queen rubbed her eyes and said, " What were you saying ? I fell asleep."—(*The Sleeping Princess*.)

Before—The ship came to an unknown country where they had never been *before*. . . . Then the King told his servants to bring food. They brought food

[1] From the *New Method Readers*, New Series, Reader 1B.

and set it on the table before the men. As soon
as they set the food on the table hundreds of
mice came out of holes in the wall. The men
had never seen so many mice before. The mice
jump^d on the table and ate up the food before
the men could take it. The mice ate up the food
before their eyes.—(*Dick and His Cat.*)

Thank you—" Did you like the dresses ? " " Yes,
thank you," she said. " Is that a nice book ? "
" Yes, thank you." Then he said, " Will you
marry me ? " She cried and ran away. He said,
" Do not run away. Say ' Yes ' or ' No.' "
" No, thank you," she said.—(*Beauty and the
Beast.*)

Four and a half per cent. of the words in the
vocabulary of Series 1 are " avoidable " in terms of
Criterion 3, and 4 per cent. are synonyms.

Most surprising, perhaps, is the variation in the
number of new words introduced in the first year's
work. A Bengali boy under present conditions
actually acquires on the average 153 words in his first
year of English work, 236 in his second, total 389.
The number of words introduced in the reading-books
is shown below.

	Series 1.	*Series 2.*	*Series 3.*	*Series 4.*	*First Expl. Series.*	*Second Expl. Series.*	*Actual*
1st book	353	327	313	844	208	222	153
2nd book	429	572	292	377	236	236	236
TOTAL	782	899	605	1221	444	458	389

It was evident that no existing books would meet the requirements of our experiments : it was therefore necessary to construct books specially. This was done.[1]

The first lesson introduced the five vowels, and two words, " A " and " I." The next lesson introduced two consonants, S and T, rendering possible such words as It, At, Is, Sit, Sat, etc.   In this way in each lesson new letters were introduced rendering possible the formation of further new words.   Meaningful sentences were begun when the vocabulary consisted of five words.   In Lesson 10 (15 letters, 65 words) Silent Drill (drill of the class by means of orders written on the black-board) was possible.   In Lesson 11 (16 letters, 86 words) the first story occurred.   The remaining lessons all contained stories, except Lesson 20 on the numerals.

At a later stage 200 exercises were added consisting of simple questions, e.g. " A man buys ten eggs.   He sells three eggs.   How many eggs has he ? "

The second reading-book assumed a knowledge of the words taught in the first.   Certain new words were added at the beginning of each new story and were introduced as often as possible in the story.   A Companion booklet indicated divisions of the stories into sections, supplied questions on each section and a list of new words introduced in that section.   The total length of the book was 13,217 words, or 56 running words per new word.   To this was later added a set of short exercises similar to those added to the first reader, a set of short stories (with questions) for practice in rapid reading ; also two Supplementary Readers containing four stories, 11,000 words in all,

[1] The *New Method Readers,* Book I, Book II.

written entirely within the original vocabulary of 444 words, no new words being introduced.[1]

The first book was used in hectographed manuscript with the second experimental class ; it was then revised and printed for use with the third experimental class.

The Essence of the Matter

When we learn to speak a language, not in the class-room but in a foreign country, we soon begin to prattle with a very small vocabulary : if we cannot say a thing one way, we twist it another way and so make it come within our stock of words—and it is surprising how much one manages to say with them, few as they are. From time to time new words are heard ; some of them are adopted and are " taken out for an airing " with the rest, so that by actual use they gradually become a part of the vocabulary.

In learning to read a foreign language the process is similar in every respect, save one—that someone else, the author of the reading-book, has to do the prattling ; he has to say a surprising amount with a few words, gradually introduce new words, and make the pupil assimilate them by repeated encounter in the course of reading. The student learning to speak selects his own words more or less by chance ; but the student who is learning to read has this advantage, that the words are selected for him with scientific accuracy.

[1] The Fisherman and the Giant and the Flying Horse ; Sakhi-Sona and Sita-Basanta (Longmans' *Story Readers*).

THE SECOND AND THIRD EXPERIMENTS

The Method of Measurement

IN any educational experiment it is necessary to have some standard of comparison whereby one may measure to what extent the experimental method is superior in its results to the ordinary method in use. In the first experiment the class was split into two equal halves and the comparison was expressed in the form of a percentage.

This system suffers from two disadvantages : (1) If one boy falls ill the score of his pair has to be eliminated from the records : in a malarious country it is difficult to retain a sufficiently large set of scores under this condition. (2) The results of an experiment have to be made intelligible to ordinary untrained school-masters ; but school-masters do not think in terms of " percentage of superiority " ; they think in terms of class-promotion and progress. It is necessary, therefore, to be able to report to them that the experimental class proved so many fractions of a year or so many years in advance of the normal progress. The average of the scores obtained by the experimental class in the test must be compared with the average score in the same test of classes higher in the same or in some typical school.

This is a coarse and perhaps ambitious measure : but a coarse measure is needed. The schoolmaster

will not be convinced of the superiority of a method worked out under experimental conditions over that which he is already using, unless it is able to claim a very wide margin of superiority—and rightly so, for he has to allow for the difference which an ordinary teacher (who does not yet fully understand the new method) and an ordinary class (which is not particularly interested) will make in the results.

We believed the inefficiency of the existing textbooks to be such that results of the magnitude of perhaps a year's gain might be achieved by using books more scientifically constructed.

The splitting of the class was therefore discontinued and this more ambitious method of measurement was adopted.

The Selection of a Class

We proposed this time to start with the alphabet. It was therefore necessary to find a class of Bengali boys who did not know the English alphabet. This was impossible : the nearest approach (and this was selected) was a Class II (age 8) in a very small " Middle School " in an unfashionable part of the town. On the average the boys knew $9\frac{1}{2}$ English letters each, and (on a very easy vocabulary-test) 0.35 of a word.

Absence of Reading Ability

The first nine lessons of the reading-book involved little more than the reading and translation of sentences—for the vocabulary seemed too small for anything else. All seemed to go well till the stories were begun (Lesson 11). Very much the same pro-

cedure was used for the stories as in the first experiment, viz. the children were required to read, prepare the answers to certain questions and stand when they had succeeded in doing so.

They knew all the words ; they read the story, and they stood. But they were unable to answer any of the questions. The whole vocabulary was revised in order to ensure that the failure was not due to lack of word-knowledge. But there was no improvement : they still appeared to gather no consecutive series of ideas from the stories ; they treated them as conglomerations of unit-words.

At this point the curious " transference " of improvement from English reading to Bengali reading in the class of seventeen-year-old students was remembered ; and it suggested that the defect here might not be in our English teaching at all, but in the boys' pure Reading Ability. It was possible that they could not really read their mother-tongue.

A very simple test was made of Bengali reading ability, with the result that no boy answered any question. The simplest possible test was given, and the result was 31 per cent. answers correct in unlimited time.

A class in Bengali reading was therefore initiated, aiming at producing Efficient Reading as discussed in Chapter II above. The effect on the English work was remarkable, and we were able to get on with the experiment. But a few of these children never really learned to read their mother-tongue ; for it was found, on applying the well-known Binet-Simon tests, that they were mentally defective. In searching for a class which had less than the normal knowledge of

the English alphabet, we had, as might have been expected, fallen upon a class which had less than the normal knowledge of everything else, and in some cases less than the normal ability to learn. However, the work was continued in order to see what results could be obtained under these exceptionally unfavourable conditions, for one of the arguments for emphasizing the *reading* of a foreign language, in the case especially of bilingual children, is based on the needs of the merely average and the below-average child. But it was obviously necessary to undertake the teaching of another class in order to observe what results would be achieved with a more representative collection of boys.

The Third Experiment

A third experimental class was therefore selected. The bottom class of an ordinary " High School " was used ; this was a class higher (Class 3) than that used in the second experiment (Class 2). All the boys knew the alphabet, and on the average they knew the meanings of 216 English words each ; but no boy was able to obtain any score on a simple test of English reading.

The Results of the First Test

The second experimental class finished the first reading-book in 82 days ; the second reader, the Exercises and one Supplementary story were finished in 59 days, total 141 days. The third experimental class finished the first book in 50 days, the second,

together with the Exercises and one of the Supplementary stories, in 44 days, total 94 days.

Two sets of tests were made, one at the end of the first, and the other at the end of the second book.

The first test was modelled on a well-known American test of silent reading ability, the Monroe-Kansas.   The test was applied to the experimental classes and also to the classes of the best school in the town (reputed as the best in Eastern Bengal).   The average score of Experimental Class 2 was mid-way between the average scores of Classes 4 and 5 of the selected school, a gain of $2\frac{1}{2}$ years in 82 days.

The same test applied to Experimental Class 3 after 50 days yielded an average score midway between the average scores of Classes 5 and 6 of the selected school, a similar gain of $2\frac{1}{2}$ years.

One month before the final test a study was made in the third experimental class with a view to observing to what extent the boys were reading with a " direct bond " between the English word and the idea and to what extent they were translating.   It was found that 53 per cent. of the boys were using the direct bond.   The boys were at this point advised that they would get on better if they endeavoured to avoid translating as they read.   A fortnight later a second observation was made and 87 per cent. were found to be using the direct bond.

It was noticeable that at the beginning of the course most of the boys muttered as they read, so that the class when engaged in reading emitted a loud humming noise.   As the course proceeded this noise of itself died away, and at the conclusion only the more backward boys even moved their lips when reading.

The Final Tests

Two tests were used in the final measurement. The first was the Monroe-Kansas test itself re-written within the vocabulary of the reading-books.[1] In other respects the exercises remained unaltered, both as to sense and (within ± 1) as to number of words.

Example :

Original

The carp is a fish that lives in the rivers of Japan : it can leap high out of the water and jump over rocks ; it can even leap over waterfalls and swim against a strong current. If you think that the carp is a strong fish, draw a line under the word " carp " : if not, draw a circle round it.

Carp.   (61 *words*.)

Revision

The carp is a fish that lives in the rivers of Japan : it can make its body go high out of the water. It can go over stones. It can go through the water very far and very quickly. If the carp is a strong fish, make a line under the word " carp " : if not make a ring round it.

Carp.   (61 *words*.)

The second test was one which we had previously used in measuring the English reading ability of

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[1] The boys of the lower classes of the selected school were, in both tests, taught all words likely to be unfamiliar. The first Kansas test was merely an imitation, using different exercises ; the second was an actual adaptation.

2,000 Bengali students from age fifteen upwards to the M.A. class of the University, and of 900 Anglo-Indian girls from age eight to nineteen. The test is divided into two parts and consists of a simple story with twelve questions in each part. The child is required to find the answers to the questions, underline them, and set the number of the question against each answer so underlined. Seventy-five per cent of correct answers is required in order to qualify in the test, and the score is derived from the time taken to qualify.[1] The first part of the test was translated into Bengali ; the second part was left in English, but was brought within the vocabulary of the reading-books (except two words).

The Results of the Final Tests

In the Monroe-Kansas test the average score of Experimental Class 2 proved equal to the average score of Class 4 of the school selected for comparison, a gain of two years. The score of Experimental Class 3 was equal to that of Class 5 of the selected school—a similar gain.

In the second test the percentage of boys who qualified in the English part of the test in Experimental Class 2 was superior to that in Class 5 of the selected school ; in Experimental Class 3 the percentage was equal to that in Class 6 of the selected school. The same tests, applied to the higher classes of the school from which the experimental classes were derived, yielded a very similar result. A comparison was also made in respect of English vocabulary and

[1] For the theory of this test, see *Bilingualism*, Chapter VI.

revealed a superiority in the experimental classes of about a year.

Thus the net result is a gain of two years in reading ability[1] (and of about one year in reading vocabulary) in English.
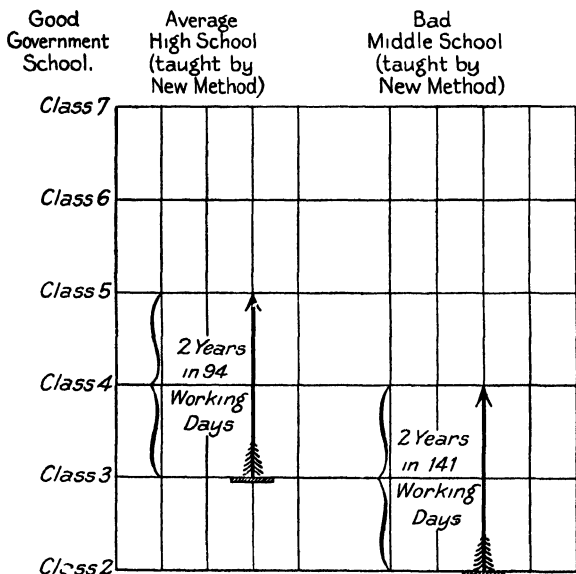

FIG. 4. In respect of English Reading the Experimental Classes taught by the " New Method " each gained two years in one year.

The Results as regards " Surrender Value "

This double test of English reading ability together

[1] English reading is, on the time-table, about one-sixth of the work of Class 3 : the above gain may thus be considered as a saving to the Province of Bengal of two-thirds of one-sixth of the cost of Class 3, viz. of about £13,000 per annum.

with a test of Bengali reading ability, was made for a special purpose.   We have said in Chapter I[1] above, " *If we can ensure that every child who begins to study a foreign language shall, at the end of two years, be able to derive pleasure from reading it, we shall have ensured that no child who begins a foreign language will ever, in the future, be able to regret it afterwards as a waste of time.*"   This triple test serves to indicate to what extent this purpose has been achieved.

We may take it that a child, who can read a story written in a foreign language at a reasonable speed and take in a reasonable proportion of the substance, has attained some definite and probably permanent achievement in the language, could continue his studies unaided (given suitable books), and would probably derive sufficient pleasure from reading stories in the foreign language to be likely to continue his studies. Now the English portion of the underlining test requires a child to obtain 75 per cent. of the ideas of a story within a reasonable time.   Ability to qualify on this test may be taken as evidence of definite ability to read the foreign language.   On the other hand, a child who in five minutes—the time-limit of the Monroe-Kansas test—cannot even read one short paragraph out of a number presented and answer a simple question on it, cannot be said to have as yet reached any definite achievement in the foreign language and would probably be unable to continue his studies unaided.

As regards those who fail to qualify in the story test and fail also to obtain any score in the short paragraph test, we may observe, by means of the first

part of the story test given in Bengali, whether they have succeeded in qualifying in the reading of their mother-tongue. For, if not, considering the amount of attention given to reading in both classes, it must appear probable that—so far from learning to read a foreign language—such boys will be fortunate if they succeed in learning to read their own with any degree of efficiency.

Examining the results of the tests from this point of view we find that :

In Class 2—33 per cent. are definitely able to read English.

33 per cent. are definitely unable to do so ; and of these 33—

24 are incapable of reading their mother-tongue efficiently.

In Class 3—43 per cent. definitely can read English.

11 per cent. definitely cannot, and of these *all* failed also in their mother-tongue.

Combining the two classes, the results are :

39 per cent. can read English.

20 per cent. cannot read English, and of these 16 fail to qualify in the reading of the mother-tongue.

41 per cent. are doubtful (but would probably qualify after another year).

Thus it appears that 80 per cent. (39+41) of the boys in the experimental classes have achieved, or are likely

within two years to achieve a usable, improvable, and enjoyable degree of reading ability in a foreign language.

Of the remaining twenty, sixteen are boys of ability so much below the normal that they may have difficulty in mastering the reading of their mother-tongue, and were better advised to make sure of this before attempting a foreign language.

THE CONSTRUCTION OF NEW READING-BOOKS

O N the completion of the work in the experimental classes described above, the experimental reading-books were taught in five other classes under direct supervision in order that all their defects might be observed. They were also introduced into a number of schools in which the teachers were specially invited to criticize.

The following are the chief points observed in the experiments and subsequent trial of the reading-books. (Numerous details, important enough to the child, but of less general interest, are omitted.) In the light of this experience the construction of a new set of reading-books was begun.

The Order of the Alphabet

The original reader introduced the letters of the alphabet in order starting with the five vowels in Lesson 1, and continuing with S and T in Lesson 2, and in the following seventeen lessons, **H, Th, N, M, P, F, Y, R, D, W, G, K, B, L, C, V, J, Q, X, Z.** This order was based merely on guess-work as to which letters were most likely to prove useful at a particular stage and upon immediate necessities in the course of story-telling.

It was later discovered, in applying to this book the Criteria described in Chapter IV above, that the majority of the less common words in its vocabulary were due to the exigencies of word-formation with the very limited number of letters available in the early stages. The thought arose that, if the relative commonness of words is a useful guide in the selection of words, a study of the relative commonness of letters might help in determining the best order of the letters. The relative commonness of the letters in the language as a whole is, of course, immaterial, for we are at this stage dealing, not with the whole language, but with the first few hundred commonest words only.

The relative commonness of the letters in these commonest words is :

First hundred words

A,   M, S, D, B,
E, O, T, H, N, R, W, I, L, Y, U, G, C, K, V, P
                                    . F,
(*Not found*, j, q, x, z).

First two hundred words

                                             B, P,
E, O, A, T, H, N, L, R, I, S, W, U, D, M, Y, F, G, C, K, V, J
(*Not found*, q, x, z).

First five hundred words

                                          B,   K,   Q,
E, O, A, R, T, N, L, I, S, H, D, U, W, M, G, C, F, Y, P, V, X, J
(*Not found*, z).

In the new readers the letter order of the first 200 words was taken as a guide. It was not rigidly followed, for a letter may be relatively uncommon yet occur in a word which is absolutely indispensable at an early stage (Example—*is*). This letter-order, however, certainly does yield better results than the empirical order originally used.

Commonness and Indispensability

This same inconsistency between commonness and indispensability is found also in the case of words. It is, for example, easy to get on without *Big, Small, Pretty*, although they are within the first 500, for other words of equal commonness take their place. There are other very common words which one can omit without even giving a substitute—*for, because, also*. The " indispensables " are the chief problem of the early stages.

A curious and very sudden change takes place just as the vocabulary reaches about 300 words : previously the problem was to do without ; but now the vocabulary suddenly becomes self-sufficient, and one looks out for the commonest words in order to drag them in.

The Maximum Count

Let us suppose that the following new words have been introduced in a certain story : *Big, Does, Brave, Bit, Catch, Caught, Cold, Braver, Do, Bite, Bitten, Did, Colder, Catches, Bigger, Bites*. In arranging these words in alphabetical order and counting them (to check the criterion, " New words per running

words "), one person may make the total nineteen and
the other may make it six, viz. :

> **Big** (*bigger*).
> **Bite** (*bites, bit, bitten, a bite, a bit*).
> **Brave** (*braver*).
> **Catch** (*catches, caught, caught cold*).
> **Cold** (*colder*).
> **Do** (*does, did*).

Some principle must be adopted to prevent incon-
sistencies. The person to be considered in framing
this principle is, not the author, nor the reviewer, nor
the printer—but the boy. Can the boy reasonably
be expected to realize that *bites* "belongs to" the verb
bite ? If he has already learned the -*s* suffix of the
third person, perhaps he can : but he can hardly be
expected to realize *caught* as the past tense of *catch*.

In the first set of readers the principle adopted was :
" Two related words are to be counted as one if the
child, with the assistance of his teacher, can be expected
to realize and remember the words as one." The
principle seemed to be reasonable but it did not work
in practice, for homonyms and grammatical inflexions
were not pointed out to the teacher, and so he did
not point them out to the boys. A textbook must be
not only boy-proof ; it must also be teacher-proof.
Moreover, a boy doing his home-work or studying
alone has not got a teacher with him.

In the new series, therefore, the principle was
adopted that the boy must be able to recognize the
words as one without assistance, if they are to be
treated as one.

There are doubtful cases in the application of every principle. In the original readers, when there was doubt, the two words were treated as one : that is, a *Minimum Count* was used. This has the advantage of keeping down the length of the book, since the number of running words depends on the number of new words. But from the boy's point of view the Minimum Count means, " *If the boy is in doubt whether the words are related, leave him in doubt.*" For the new series the principle of the Maximum Count was adopted (viz. " *When in doubt, treat the words as two* "), but new usages are bracketed and excluded in computing the number of " new words." The Maximum Count is hard on the author ; it involves very elaborate indexing ; in fact a story in its composition has to go through ten different processes : but it makes things very much easier for the teacher and the boy.

Meaningful Exercises

In the second experiment we did not discover until the tenth lesson that the boys were not really reading with understanding. This was due to their inability to read the mother-tongue ; but the English reading-book was at fault also. For sentences with nothing depending on their meaning (no answer to give or response to make) tend to produce a habit of treating a language as meaningless. When these readers were constructed it seemed impossible to introduce in these very early stages exercises involving a response dependent on the understanding of the sentence ; nor was the importance of so doing realized at that time. In the new series the third lesson is on the Question-

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mark, and though the vocabulary at this point consists of only eleven words (six letters) there are ten such exercises here, and there are exercises in every subsequent lesson. The early exercises are sometimes rather quaint, but they are sufficient to ensure the habit of treating the foreign language as something conveying meaning.

The Size of the Unit

In reading we run our eyes over a certain amount of printed matter and certain ideas enter the mind. At intervals we look up and review the ideas thus received. By the *Unit of Reading* is meant the section of the text which we read before looking up and reviewing the substance. This Unit tends to be smaller in the reading of a foreign language than in the reading of the mother-tongue.

The reason of this perhaps is that we receive the ideas in one language, but in the review we express them in another (the mother-tongue), and perhaps the ideas, in changing over, are at one point wordless, and tend at that point to be rather evanescent. Be that as it may, we seem to forget the substance more rapidly in reading a foreign language than in reading our own. But it is found that the power of retaining the substance of a larger " unit " can be improved by practice. Underlining is a great help. (Incidentally it is a curious fact that we read more rapidly when we underline than when we do not.)[1]

In practice this point regarding the Size of the Unit means that in the early stages of the course the stories

[1] *Bilingualism*, Tables 20, 21, 22, 23.

should be divided into small sections with a few questions on each, and in the later reading-books the sections should gradually be made larger and larger. Thus by dealing with units of gradually increasing size the child will be enabled to overcome this disability of " evanescence."

Question-density

In Chapter II above we have shown that the most difficult type of reading is that in which the Question-density is very low. (The reader has probably noticed for himself how much more difficult it is to " skim " a novel in a foreign language than to read it.) It follows that there should be the maximum question-density in the first reader, viz. fifty (questions per 1,000 words) ; and in each successive book the density should gradually decrease.

These principles were not realized when the original readers were constructed : the units are too large, and are not graded ; and the question-density is too low.

The Selection of Subject-matter

Once the alphabet is disposed of, the only reason for introducing any words outside that section of the Word-frequency List on which one is working is that the outside words are unavoidably necessary to the plot of the story or article.

The number of such unavoidable words will depend on the subject matter selected. A great mistake was made in the original Second Reader by endeavouring

to introduce informative articles.   Such articles make much greater demands on the vocabulary than do stories, and tend to introduce semi-technical words of low frequency (e.g. *pulp* in *How a book is made*). Such articles should be deferred to a later s'.age when the vocabulary is larger.

Technical Vocabularies

It may be said that, if this principle is adopted, the student who wishes to read English in order to obtain scientific culture will acquire merely the vocabulary of fiction.   It is obvious that such a person must necessarily obtain first a general vocabulary : a vocabulary of about 3,000 words will comprise all the *ordinary* words necessary for reading technical material. A study has recently been made by L. C. Pressey[1] of the technical vocabulary peculiar to various arts and sciences.   It is a simple matter to construct reading-books on precisely the same principles as before, branching off from and assuming the general vocabulary up to 3,000 words, which will introduce and practise any one of these specific vocabularies required. Each of these specific readers would be independent, so that the vocabulary of one would not be assumed in another nor in the subsequent general readers.

Poetry

The vocabulary of poetry invariably includes words

[1] L. C. Pressey : The Technical Vocabulary of the Public School Subjects, *Educational Research Bulletin of Ohio State University*, III, 182, April 30, 1924.

of low frequency, and substitution of more useful words is difficult. Poetry should not, properly, be introduced until a very late stage, though it may be necessary to sacrifice efficiency to popular opinion which demands it earlier.

The Selection of Stories

The original reading-books were primarily intended for Bengali boys ; preference was therefore given to stories of Bengali or Indian origin. This policy was one of doubtful wisdom ; for these Indian stories tended to introduce words of local usage, e.g. *rupee, jack-fruit,* which will not be helpful to the child later in reading English literature. Such words may be given preference in that part of the English course which deals with speech and writing which naturally refer to the child's own environment ; but the Reading course aims at giving access to English books, and the majority of English books are not written with reference to the Indian environment.[1]

Another reason against this policy is that the stories of Indian origin did not appear to be more popular with the children themselves than the others. An attempt was made to discover what was the " common factor " of the stories which proved most popular. Children who had studied the two reading-books were asked which stories they liked best. The general favourites appeared to be those stories which are not peculiar to India or to any one country, but which are current in many languages and well-loved by the

[1] Of course ideas difficult and unfamiliar to foreign children are to be avoided.

children of many nations—both east and west of Suez —Ali Baba, and such-like. In the new series, therefore, those stories were selected which are most widely diffused among many languages, for it appears that these stories contain some element of universal appeal to mankind—and child-kind—as such.[1]

Local colour involves local words, and local words are of less general usefulness : *horses* (300th) are everywhere, but the *bullock-* (7,700th) carts of Bengal are local colour. For this reason, in the early stages of the vocabulary, when every word must possess the highest possible degree of utility, local colour is to be avoided. The special advantage of these stories of universal appeal is that they possess little or no local colour. The local colour of fairy-land seems to be the common property of the childhood of all nations.

Conclusion

In order to put into practice the results of the investigation described above it is necessary to construct a complete series of English reading-books intended for foreign children, starting out from a knowledge of not a single English letter or word, and carrying the vocabulary up to the first 5,000 commonest words, viz. that point at which any non-technical material can be read with ease and pleasure.

The work is already well advanced.

The series consists (for the present) of ten reading-books, each accompanied by a " Companion " and followed by a Supplementary Reader.

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[1] See *John o' London's Weekly*, Oct. 3, 24, 31 ; Nov. 7, 14, 21 : ' The Most Popular Fairy-tales."

The Companions supply a list of the new words as they occur section by section, with their vernacular meanings, provide questions on the substance of each section, and an alphabetical list of the total vocabulary thus far (up to the end of the given book) with key-numbers showing in what lesson each word or usage first appeared, diacritical marks indicating the correct pronunciation of irregular spellings, and vernacular equivalents. These books being small and cheap are readily prepared in any required language.

The Supplementary Readers contain no words not already taught in the immediately preceding reading-book and in the previous portion of the course. Their purpose is to confer greater facility in the use of the vocabulary already gained, to give the child a sense of achievement and a taste of the pleasure to be derived from his accomplishment, and lastly to supply practice in the art of detecting the essentials of a passage without the help of questions.

The first book introduces 222 words, the second 236, the third and fourth introduce 300 each, the fifth and sixth 350 each, the seventh and eighth 400 each, the ninth and tenth 450 each—total, about 3,500 words.

It is not possible to predict the normal rate of progress of children using this series. At their present rate of progress Bengali children obtain a vocabulary of 3,500 words after six or seven years. We may—in view of the gain of the experimental classes—at least expect them to obtain that vocabulary in five years using this method. This means that two of the above reading-books will be read in each year. But, since the experimental classes proceeded at three times the normal rate, it may reasonably be hoped that any

moderately good class with a qualified teacher will be able to proceed at *twice* the normal rate, and so complete the present series in about three years.   This will involve the reading of one book in each term.

However, the books are so divided as to permit of any rate of progress, fast or slow.   Moreover, by using the Supplementary Readers in class, or by omitting them and giving them as out-of-school reading, variations in the rate of progress of different classes of the same school may be neutralized.

In this way it is hoped to provide a means of learning to read English rapidly and not without enjoyment, and so to do something to reduce the educational handicap of the bilingual child.

The application of the system to the teaching of other languages and to the teaching of reading of the mother-tongue are problems which are yet to be explored. [1]

It has been successfully applied to teaching Bengalis to read their mother-tongue.